GP1S53 Compact Potointerrupter

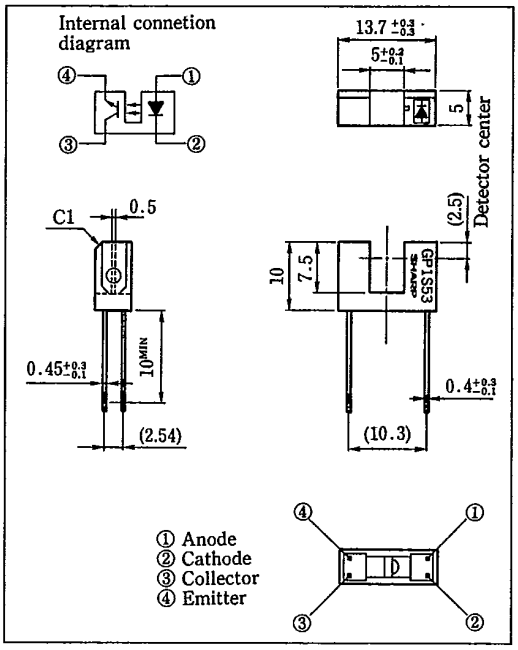
■ Features

1. Compact type
2. High sensing accuracy (Slilt width: 0.5mm)
3. PWB mounting type

■ Applications

1. OA equipment, such as FDDs, printers, facsimiles
2. VCRs
3. Optoelectronic switches

■ Outline Dimensions (Unit : mm)



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■ Absolute Maximum Rating (Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak forward current	I_{FM}	1	A
	Reverse voltage	V_R	6	V
	Power dissipation	P	75	mW
Output	Cellector-emitter voltage	V_{CEO}	35	V
	Emitter-collector voltage	V_{ECO}	6	V
	Collector current	I_C	20	mA
	Collector power dissipation	P_C	75	mW
Operating temperature		T_{opr}	−25～+85	°C
Storage temperature		T_{stg}	−40～+100	°C
*2Soldering temperature		T_{sol}	260	°C

*1 Pulse width≦100μs, Duty ratio=0.01
*2 For 5 seconds

■ Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V_F	I_F=20mA	—	1.25	1.4	V
	Peak forward voltage	V_{FM}	I_{FM}=0.5A	—	3	4	V
	Reverse current	I_R	V_R=3V	—	—	10	μA
Output	Collector dark current	I_{CEO}	V_{CE}=20V	—	10^{-9}	10^{-7}	A
Transfer characteristics	Current transfer ratio	CTR	I_F=20mA, V_{CE}=5V	2.5	—	75	%
	Collector-emitter saturation voltage	$V_{CE(sat)}$	I_F=40mA, I_C=0.2mA	—	—	0.4	V
	Response time (Rise)	t_r	V_{CE}=2V, I_C=2mA	—	3	15	μs
	Response time (Fall)	t_f	R_L=100Ω	—	4	20	μs

Fig. 1 Forward Current vs. Ambient Temperature

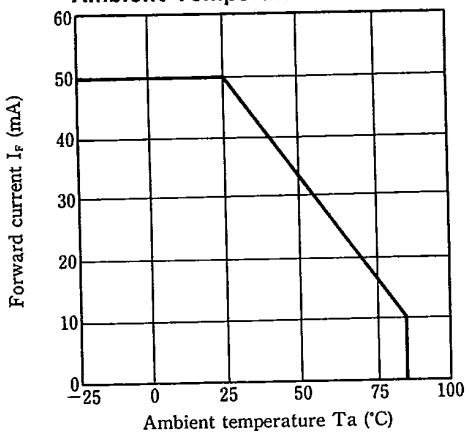


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

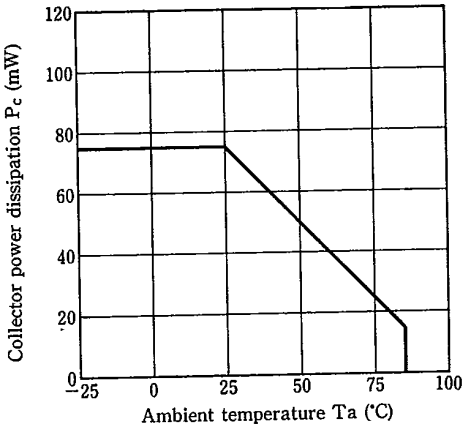


Fig. 3 Peak Forward Current vs. Duty Ratio

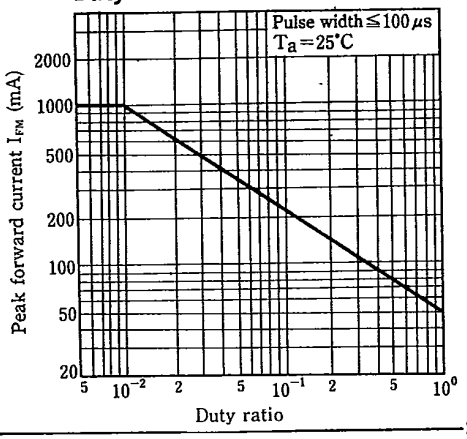


Fig. 4 Forward Current vs. Forward Voltage

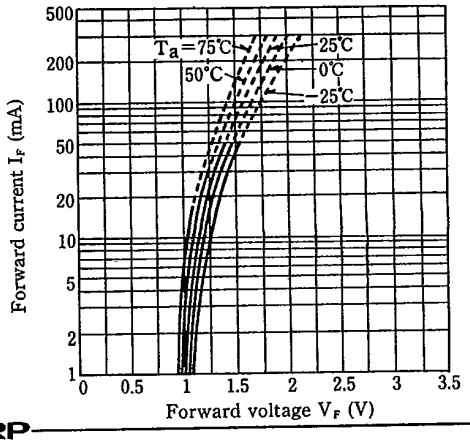


Fig. 5 Collector Current vs. Forward Current

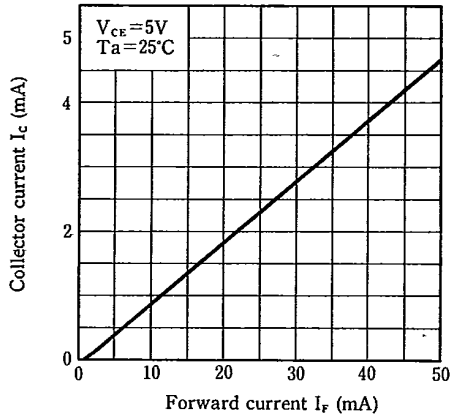


Fig. 6 Collector Current vs. Collector-emitter Voltage

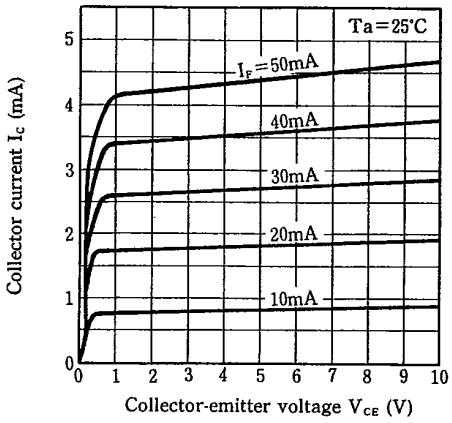


Fig. 7 Collector Current vs. Ambient Temperature

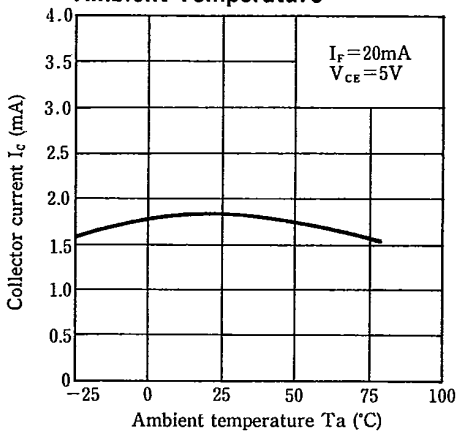


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

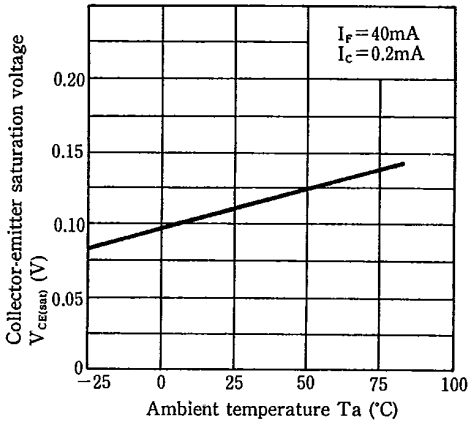
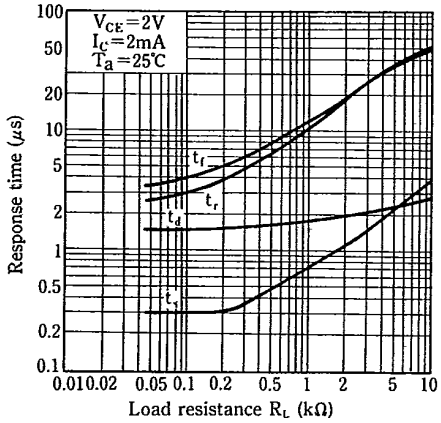


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

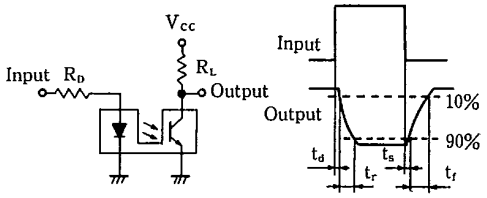


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Fig. 10 Frequency Response

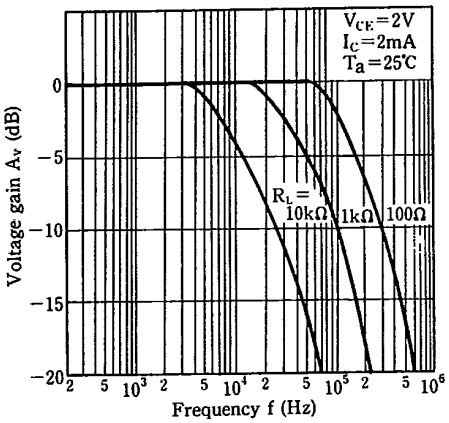

Fig. 11 Collector Dark Current vs. Ambient Temperature

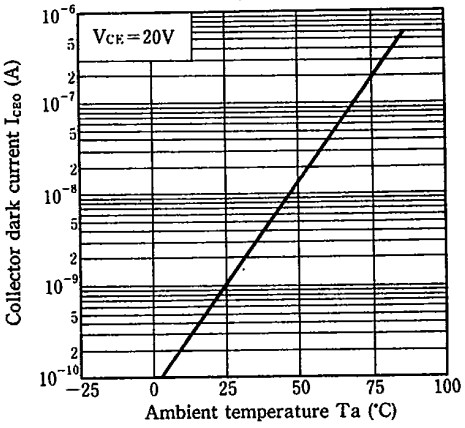

Fig. 12 Relative Collector Current vs. Shield Distance (1)

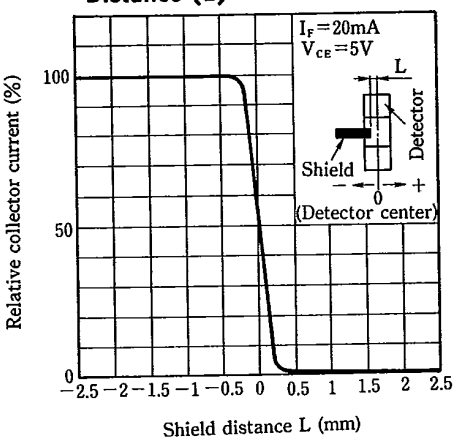

Fig. 13 Relative collector Current vs. Shield Distance (2)